

MICHIGAN ENVIRONMENTAL SCIENCE BOARD
LOW LEVEL RADIOACTIVE WASTE PANEL
MEETING SUMMARY
WEDNESDAY, SEPTEMBER 20, 1995
HOLDEN HALL, MICHIGAN STATE UNIVERSITY
EAST LANSING, MICHIGAN

PANEL MEMBERS PRESENT

Dr. Lawrence Fischer, Chair
Mr. James Carey
Dr. David Morrissey
Dr. Conrad Nagle
Dr. Bette Premo
Mr. Keith Harrison

PANEL MEMBERS ABSENT

Dr. David Long

DMB\EAD SUPPORT STAFF PRESENT

Mr. Jesse Harrold, Environmental Officer

I CALL TO ORDER

Dr. Lawrence Fischer, Chair, called the meeting of the Low Level Radioactive Waste Panel to order at 9:00 a.m. Dr. Fischer had the Panel members introduce themselves and then read the charge given to the Michigan Environmental Science Board (MESB) by Governor John Engler (see Attachment 1). Mr. Harrison indicated that the Governor's Office had been informed that the October deadline date was not possible to meet and that the Panel would try to have the report completed in early 1996.

The Panel briefly discussed the charges given to it by the Governor in relation to the need for experts and information in areas not familiar to the Panel members. Mr. Harrison indicated that the MESB could obtain the experts and asked the Panel members to provide him with names, telephone numbers and short descriptions of the speakers' expertise.

II PRESENTATION

Mr. Dennis Schornack, Commissioner for the Michigan Low Level Radioactive Waste (LLRW) Authority presented a brief overview of the low-level radioactive waste program in Michigan. A summary of his presentation is contained in Appendix 2.

Dr. Premo asked if the state siting criteria committee had a containment structure in mind when they began looking at the criteria. Mr. Schornack indicated that the design in mind at that time was one which was half below grade and half above grade.

Dr. Fischer asked about the decision to eliminate the idea of shallow land burial in favor of an engineered facility. Mr. Schornack responded that it was a legislative, not scientific, decision to choose the monitored retrievable engineered facility. The rules still allow for an engineered facility partially below the ground.

The importance of public education regarding low level radioactive waste and isolation facilities was discussed. Dr. Premo suggested that a campaign similar to that of the Department of Corrections' is needed to inform localities of the actual risks and benefits of low level radioactive waste facilities. Dr. Nagle indicated that he thought that educating on relative risks initially may be a mistake, since the issue is an emotional one. According to him, people need to be educated about the benefits and must believe that the generation and storage of low level radioactive waste is, overall, in their own best interest as a society and community. Mr. Schornack suggested that Dr. Bill Copper of Michigan State University address the Panel on the subject of relative risk.

Dr. Fischer expressed concerned about the timing of the Panel's report. If federal standards are recognized or adopted by the legislature in the next few months, it will be done without MESB input. Mr. Schornack responded that any criteria recommended by the MESB that differed from those that might be adopted prior to the report's release could be incorporated into local agreements. No matter what happens legislatively, MESB recommendations are sure to be considered carefully in Michigan and will also be relevant to other states.

Dr. Premo asked whether Michigan has decided against forming or joining any other state consortium. Mr. Schornack responded that the only way to protect the state from being forced to receive waste from other states is to join a compact, so Michigan has been considering joining with some small waste-generating states, such as Rhode Island. South Carolina is currently accepting Michigan waste.

There was a discussion regarding how community input and decision-making would fit into the process of facility siting since there are many legal requirements that have to be met and are not a matter of choice. Mr. Schornack responded that although the construction and operation of a facility would be overseen by the state and that the land on which the facility would be sited must be publicly owned, the importance of an agreement between the state and a local community where a site is located would not be diminished.

Mr. Carey asked whether anyone has reviewed, or will review, the economics of an isolation facility and if there were certain conditions that must be met to make a facility financially viable. Mr. Schornack replied that the Public Service Commission has

modeled some of the economics and that the report would be sent to the Panel. The financial problems are minimized to the extent that the facility will be incrementally built, as needed.

III PUBLIC COMMENT

Mr. Harrison read a memorandum to the MESB from Tony Brown, Solid Waste Coordinator of Clare County, regarding the siting of a low-level radioactive waste facility in Michigan (see Attachment 3).

Ms. Terry Gill, Greenwood, Michigan and a member of the Board of Governors, asked that a list of the documents considered by the Panel be made available to the public. Mr. Harrison replied that such a list is available from MESB on request. Ms. Gill said she was pleased to hear that facility design would be taken into account by the Panel and suggested that it also look at waste acceptance criteria. Other states have done studies on acceptance criteria and have characterized their waste streams. Michigan needs to conduct similar studies. She said that until the possible current and future dangers are satisfactorily dealt with, communities will not volunteer to be sites.

Dr. Morrissey asked Ms. Gill whether she thought that studies done in other states actually needed to be replicated by Michigan. She responded that the information should ultimately be specific to the situation in Michigan. Mr. Schornack indicated that up until this point it has been assumed that all waste would be de-watered. In terms of acceptance criteria, he said that the Board of Governors' report contemplated that that would be part of the facility development agreement between the development authority and the community. Mr. Harrison said he considered that one of the Panel's goals would be to look at, in addition to the siting criteria, the relationship between wastes and facilities in order to determine what kinds of facilities could handle the likely waste stream. Dr. Fischer agreed that the Panel should look at both waste stream characterization and acceptance criteria as part of its review.

Mr. Fred Fuller, Regional Alliance, expressed two concerns. First, he said that if the type of engineered facility and the acceptance criteria are actually to be decided by the community near the site and are not yet known, it would be hard for the MESB to make scientific judgements about those things. He was additionally concerned about the question of how long the state could guarantee safety, since radioactive wastes last hundreds of years.

Mr. Carey indicated that the Panel needs to look at the definition of low-level radioactive waste. While there are some long-life low-level radioactive wastes, other characteristics such as form and activity of the waste need to be also evaluated. A long half-life in and of itself does not necessarily make a waste dangerous.

George Bruchmann, Michigan Department of Public Health, agreed with Mr. Carey that it was necessary to look at the whole picture, and felt that this was, in part accomplished with 10CFR61, especially through subparts -c and -d, the performance objectives. Mr.

Bruchmann suggested contacting Jim Kennedy from the Nuclear Regulatory Commission. Mr. Bruchmann also spoke of a recommendation in the Board of Governors' draft report that allows host communities to set more stringent requirements on the licensee. Ted Bornhorst, Board of Governors, should be able to provide the Panel with in depth information on the validity of the state siting criteria.

Discussion continued on the desire to communicate with individuals who were involved in the drafting of the legislation, creation of criteria, and/or have scientifically reviewed the material. Ms. Karen East, Legislative Service Bureau, suggested two possible resources, the Linda Layman study for the Midwest Compact Commission, and the Battelle Memorial Institute study. Mr. Harrison indicated that his office would arrange to obtain the two studies.

In discussing the appropriate next steps for the Panel, Dr. Fischer indicated that there was a need for the Panel to fully understand the federal regulations and how they apply to Michigan. There also was a need to understand Michigan's environmental, geographic, and geologic characteristics in order to determine what unique qualities may exist. In addition, Dr. Fischer stated that it was important for the Panel to be cognizant of both the present and future waste streams that are and are anticipated to be generated. Mr. Morrissey added that the scale and specific design of facilities being considered should also be an important component in the Panel's evaluation.

Dr. Fischer indicated that specific writing tasks to the Panel members will probably be assigned at the next meeting. In the meantime, he asked that the Panel members begin reading the material sent to them and to begin doing some research on their own.

IV NEXT MEETING DATE

No date was set for the next meeting of the Panel. Mr. Harrison indicated that his office would poll the Panel members on the best date for everyone.

V ADJOURNMENT

The meeting was adjourned at 12:00 p.m.

Keith G. Harrison, M.A., R.S., Cert. Ecol.
Executive Director
Michigan Environmental Science Board

ATTACHMENT 1. Letter to the Michigan Environmental Science Board from Governor John Engler.

Not in an electronic form

ATTACHMENT 2. Presentation by Mr. Dennis Schornack, Commissioner for the Michigan Low Level Radioactive Waste Authority.

Mr. Schornack indicated that his orientation with low-level radioactive waste (LLRW) began in 1979 when he was associated with the Michigan House of Representative staff for Public Health and Appropriations and when Public Act 204 was adopted. About 15 years ago Congress, the federal government and the National Association of Governors made a deal on how LLRW would be handled. The deal made the federal government responsible for high level radioactive waste and states responsible for LLRW. The federal LLRW Policy Act was passed in 1980 and amended in 1985. The act encouraged states to cooperate with each other in terms of the disposal of LLRW by forming consortiums to take advantage of environmental conditions and economies of scale.

In 1982, Michigan joined a seven state compact and was selected as the host state in 1987 for the first disposal facility. The decision was based primarily on the rate of LLRW waste generation, in which Michigan was the leader. Shortly thereafter, Michigan went to work on Public Act 204 which included site selection criteria and incorporated some 32 amendments. This resulted in a top-down driven process of site selection which left little room for public comment. Mr. Schornack indicated that it was his supposition at the time that if the criteria were such, that Michigan would not be able to identify a site and therefore could not be the host state. It was obvious that the scientific basis for many of the siting criteria was inadequate. One example is the limitation of not allowing a site within ten miles of any Great Lake shoreline. The current status of these criteria are overseen by the Michigan Low-Level Radioactive Waste Authority and its Board of Governors. In September 1995, the Board of Governors issued its report entitled, *Report to the Legislature from the Board of Governors of the International Low-Level Radioactive Waste Research and Education Institute*.

There are currently 50 limiting criteria and 12 favorable criteria recognized in Michigan. Michigan is recognized as having the most restrictive criteria of all the states. One of these criteria added 3,000 feet to the federal buffer pertaining to surface and ground water discharges. It was also concluded by Laymen Associates and Battelle Memorial Institute that under the present Michigan siting criteria there are no sites in Michigan. The same report questioned the origin of many of the Michigan siting criteria.

Under contract in 1988 and 1989, Michigan State University, using only 12 of the limiting criteria and one of the favorable criteria, eliminated 97% of the land mass in Michigan. Many of the criteria required surrogate data such as the 500-year flood plain. A single criterion, requiring a distance of one kilometer from all surface water, eliminated 62% of the state. When three possible locations were finally determined, one in Clare county where a public meeting was held, a state police escort was required to free the participants to leave the meeting. In time, all three areas were eliminated for one reason

or another. The state criteria assume a shallow land burial site and do not consider an engineered structural containment facility.

As a result of Michigan's inability to site a LLRW isolation facility, the three servicing sites outside of Michigan put Michigan on notice of service refusal which they executed in November of 1990. As a result of this action, Michigan has accumulated 75,000 cubic feet of LLRW stored at about 50 locations in the state. Michigan reneged on the interstate compact and lost the federal siting money in early 1990 and was expelled from the compact in June 1991.

LLRW is a solid waste and does not leak or seep into the underburden. The federal standards for a engineered facility are concerned with the integrity of the proposed structure. The immobilization of the waste by imbedding it in plastic or concrete and then placing it in a stable container is a separate matter. This eliminates the possibility that a liquid could react with the waste and mobilize it.

Politics have been the problem in siting a LLRW repository in Michigan in the past fifteen years. It is evident that there are acceptable geological conditions in Michigan for a LLRW engineered containment facility and the state of the art of constructing a LLRW containment facility is more than adequate.

The Michigan Low-Level Radioactive Waste Authority Board of Governors has recommended adoption of the federal standards in 10CFR61 plus any restriction a host community would impose. This approach would maximize the number of communities which could pursue a site host application if so desired. A bill is currently being developed which would make the amendments to Public act 204 consistent with the Board of Governors' recommendations.

ATTACHMENT 3. Memorandum to the Michigan Environmental Science Board from Tony Brown, St. Clare County, Michigan.

To: The Michigan Environmental Science Board

From: Tony L. Brown, solid Waste Coordinator of Clare County.

Re: Siting of a Low Level Radioactive Waste Facility in Michigan.

Dear Board Members,

I have some vast concerns in regards to siting a Low-Level Radioactive Waste Facility in the State of Michigan. First off, Michigan is nearly completely surrounded by the second largest source of surface freshwater in the world (The Great Lakes). No where else on this continent will a comparable amount of surface freshwater be found. More people are dependent upon this fresh surface water source than any other worldwide. My question to the Michigan Environmental Science Board is "Is it worth the risk of jeopardizing this resource's integrity???"

I understand that the best engineering practices in the world are used to develop facilities that generate and utilize radioactive material and those that store spent radioactive waste, and all due respect should be forwarded to those engineers. I also understand that facilities that utilize radioactive material are necessary in the state of Michigan. However, it is not necessary to build a facility(s) to store all of the Low Level Radioactive Waste generated in Michigan within state boundaries.

Centralizing all the radioactive waste generated in Michigan within the state boundaries will lead to catastrophic circumstances. How? The Principle of Uniformitarianism can best answer this question. The Principle of Uniformitarianism states, "The key to understanding future events, is to understand what has happened in the past." Michigan has proven to be very diverse climatically, geologically, and geomorphologically over the last 15,000 years. The engineering practices used to develop these facilities only look at the past couple of hundred years. Man can not build any structure that will not succumb to the forces of nature eventually. Regardless of whether it is tomorrow, next year, the next century, or the next era, environmental conditions will change in Michigan. Centralization of radioactive waste to a couple of designated waste facilities in Michigan causes an increased hazard in regards to natural disasters. The potential energy of the large volume of low-level radioactive waste stored can quite possibly exceed the kinetic energy released during the Chernobyl incident. A release of this nature could prove to be very devastating to the natural environment, to the people of Michigan and to the national economy. A release of this magnitude would inevitably happen if we allow centralized low level radioactive waste facilities to be operational within the state boundaries, it is just a matter of time. Possibly not in our time, but within geological time it is destined.

Alternative solutions to this problem need to be approached. For instance regional low-level radioactive waste facilities could be funded by the state of Michigan outside of the Great Lakes Region in an area that is proven to be much less diverse in natural resources, climate, geology, and geomorphology. Regions that meet these criteria and that do site low-level radioactive waste facilities can then charge a royalty fee and be able to produce a significant revenue from this.

All I ask is that you think twice about any decision that you make and that you utilize "Good Science".

Respectfully submitted,

Tony L. Brown

Solid Waste Coordinator for Clare County